Audit of Forest Planning and Practices

MacMillan Bloedel Limited
West Island Timberlands
(subsequently acquired by Weyerhaeuser Company Limited)

Tree Farm Licence 44

FPB/ARC/37

March 2001

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Report from the Board

A. Report from the Board

This is the Board's report on a compliance auditof Tree Farm Licence 44 (TFL 44) held by MacMillan Bloedel Limited (MacMillan Bloedel), subsequently acquired by Weyerhaeuser Company Limited (Weyerhaeuser), and administered by its West Island Timberlands unit. TFL 44 is located in the South Island Forest District in west-central Vancouver Island in the vicinity of the communities of Port Alberni, Ucluelet and Bamfield (see attached map).

The audit examined MacMillan Bloedel's activities and obligations from July 16, 1998 to August 15, 1999. The report from the auditor (Part C) provides further details on the location of TFL 44, the scope of the audit and the audit findings. The report from the auditor is based on the results of the audit, applying the audit procedures described in Part B.[1]

Before completing this report, the Board considered written representations from Weyerhaeuser as required under section 182 of the *Forest Practices Code of British Columbia Act*. The Board also considered the report from the auditor, along with supporting audit evidence. Based on its analysis of this information, the Board provides the following conclusions and recommendation.

Conclusions

Except for the significant non-compliance addressed below, MacMillan Bloedel's operational planning; timber harvesting; road construction, maintenance and deactivation; silviculture; and fire protection activities in the period from July 16, 1998 to August 15, 1999 generally complied with Forest Practices Code requirements. Since there were no forest development activities in the Clayoquot portion of the TFL, industrial activity was limited. All this activity was conducted in compliance with the Code.

However, significant non-compliance with Code requirements occurred in MacMillan Bloedel's windthrow management, road construction and bridge maintenance:

- Windthrow Management: failure to comply with pruning prescriptions, which are key aspects of the windthrow management strategy
- Road Construction: non-compliance with geotechnical prescriptions and/or construction plans and practices for operating in steep terrain
- Road Construction: poorly constructed culverts in one part of the TFL
- Bridge Maintenance: failure of the inspection program to provide the required information and assurance as to the adequate condition of bridges, with specific deficiencies identified at six locations.

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[1] Part B of this document provides background information on the Board's audit program and the process followed by the Board in preparing its report.

These non-compliant practices did not necessarily result in high impacts or harm to persons or the environment. However, the frequency of their occurrence created the potential for greater and cumulative environmental impacts, and also indicated shortcomings in the management of such practices in parts of the TFL during the audit period.

Weyerhaeuser has advised the Board of a number of remedial actions with respect to findings in the auditor's report. The Board is satisfied that, on the completion of said remedial actions, Weyerhaeuser will have adequately responded to the issues raised in the report from the auditor.

Recommendation

As provided by section 185 of the Act, the Board recommends that Weyerhaeuser assure the Board that its windthrow management, road construction and bridge maintenance practices comply with relevant provisions of the Code, and confirm that the remedial measures reported to the Board in these areas of practice have been implemented.

In accordance with section 186 of the Act, the Board requests:

1. that Weyerhaeuser advise the Board, by March 30, 2001 of actions taken, results attained and timing involved in fully addressing this recommendation; and
2. that the South Island Forest District confirm to the Board by April 30, 2001 that Weyerhaeuser has implemented the remedial measures reported to the Board concerning windthrow management, road construction and bridge maintenance.

John Cuthbert
Vice-Chair

March 6, 2001

Forest Practices Board Compliance Audit Process

B. Forest Practices Board Compliance Audit Process

Background

The Forest Practices Board conducts audits of government's and agreement holder's compliance with the *Forest Practices Code of British Columbia Act* and regulations (the Code). The Board is given the authority to conduct these periodic independent audits by section 176 of the Act. Compliance audits examine forest planning and practices to determine whether or not they meet Code requirements.

The Board undertakes both "limited scope" and "full scope" compliance audits. A limited scope audit involves the examination of selected forest practices (e.g., roads, or timber harvesting, or silviculture) and the related operational planning activities. A full scope audit examines all operational planning activities and forest practices.

The Board determines how many audits it will conduct in a year, and what type of audits (limited or full scope), based on budget and other considerations. The Board audits agreement holders who have forest licences or other tenures under the *Forest Act* or the *Range Act*. The Board also audits government's Small Business Forest Enterprise Program (SBFEP) which is administered by Ministry of Forests district offices. Selection of agreement holders and district SBFEPs for audit is done randomly, using a computer program, to ensure a fair, unbiased selection of auditees.

Audit Standards

Audits by the Forest Practices Board are conducted in accordance with the auditing standards developed by the Board. These standards are consistent with generally accepted auditing standards.

The audits determine compliance with the Code based on criteria derived from the *Forest Practices Code of British Columbia Act* and its related regulations. Audit criteria are established for the evaluation or measurement of each practice required by the Code. The criteria reflect judgments about the level of performance that constitutes compliance with each requirement.

The standards and procedures for compliance audits are described in the Board's *Compliance Audit Reference Manual*.

Audit Process

Conducting the Audit

Once the Board selects an audit and decides on the scope of the audit (limited scope or full scope), the staff and resources required to conduct the audit and the period covered by the audit are determined. Board staff also meet with the party being audited to discuss the logistics of the audit before commencing the work.

All the activities carried out during the period subject to audit are identified. This includes activities such as the sites harvested or replanted and road sections built or deactivated during the audit period. The items that comprise each forest activity are referred to as a "population." For example, all sites harvested form the "timber harvesting population." All road sections constructed form the "road construction population." The populations are then sub-divided based on factors such as the characteristics of the sites and the potential severity of the consequences of non-compliance on the sites.

The most efficient means of obtaining information to conclude whether there is compliance with the Code is chosen for each population. Because of limited resources, sampling is usually relied upon to obtain audit evidence, rather than inspecting all activities.

Individual sites and forest practices within each population have different characteristics, such as the type of terrain or type of yarding. Each population is divided into distinct sub-populations on the basis of common characteristics (e.g., steep ground vs. flat ground). A separate sample is selected for each population (e.g., the cutblocks selected for auditing timber harvesting). Within each population, more audit effort (i.e., more audit sampling) is allocated to the sub-population where the risk of non-compliance is greater.

Audit work in the field includes assessments from helicopters and intensive ground procedures such as the measurement of specific features like road width. The audit teams generally spend two to three weeks in the field.

Evaluating the Results

The Board recognizes that compliance with the many requirements of the Code is more a matter of degree than absolute adherence. Determining compliance requires the exercise of professional judgment within the direction provided by the Board.

Auditors collect, analyze, interpret and document information to support the audit results. The audit team, comprised of professionals and technical experts, first determines whether forest practices are in compliance with Code requirements. For those practices considered to not be in compliance, the audit team then evaluates the degree to which the practices are judged not in compliance. The significance of the non-compliance is determined based on a number of criteria including the magnitude of the event, the frequency of its occurrence, and the severity of the consequences.

As part of the assessment process, auditors categorize their findings into the following levels of compliance:

Compliance – where the auditor finds that practices meet Code requirements.

Not significant non-compliance – where the auditor, upon reaching a non-compliance conclusion, determines that a non-compliance event, or the accumulation and consequences of a number of non-compliance events, is not significant and is not considered worthy of reporting.

Significant non-compliance – where the auditor determines that the event or condition, or the accumulation and consequences of a number of non-compliance events or conditions, is significant and is considered worthy of reporting.

Significant breach – where the auditor finds that significant harm has occurred or is beginning to occur to persons or the environment as a result of the non-compliance. A significant breach can also result from the cumulative effect of a number of non-compliance events or conditions.

Identification of a possible significant breach requires the auditor to conduct tests to confirm whether or not there has been a breach. If it is determined that a significant breach has occurred, the auditor is required by the *Forest Practices Board Regulation* to immediately advise the Board, the party being audited, and the Ministers of Forests, Energy & Mines, and Environment, Lands & Parks.

Reporting

Based on the above evaluation, the auditor then prepares the "Report from the Auditor" for submission to the Board. The party being audited is given a draft of the report before it is submitted to the Board so that the party is fully aware of the findings. The party is also kept fully informed of the audit findings throughout the process, and is given opportunities to provide additional relevant information and to ensure the auditor has complete and correct information.

Once the auditor submits the report, the Board reviews it and determines whether any party or person is potentially adversely affected by the audit findings. If so, the party or person must be given an opportunity to make representations before the Board decides the matter and issues a final report to the public and government. The representations allow potentially adversely affected parties to present their views to the Board.

At the discretion of the Board, representations may be written or oral. The Board will generally offer written representations to potentially adversely affected parties, unless the circumstances strongly support the need for an oral hearing.

The Board then reviews both the report from the auditor and the representations before preparing its final report, which includes the Board's conclusions and may also include recommendations, if appropriate.

If the Board's conclusions or recommendations result in newly adversely affected parties or persons, additional representations would be required.

Once the representations have been completed, the report is finalized and released: first to the auditee and then to the public and government.

Report from the Auditor

C. Report from the Auditor

1.0 Introduction

As part of the Forest Practices Board's 1999 compliance audit program, Tree Farm Licence 44 (TFL 44) was selected for audit from the population of major forest licences within the Vancouver Forest Region. The licence, held by MacMillan Bloedel Limited, was selected randomly and not on the basis of location or level of performance. Subsequent to the audit, MacMillan Bloedel was acquired by Weyerhaeuser Company Limited.

TFL 44 is located in west-central Vancouver Island in the vicinity of the communities of Port Alberni, Tofino, Ucluelet and Bamfield. It extends from Strathcona Park in the north to Walbran Creek in the south, including land from the Pacific Ocean to the Beaufort Range and Mount Arrowsmith (see attached map). It occupies some 411,000 hectares, about one-eighth of Vancouver Island, in the South Island Forest District. During the audit period, the TFL was managed by three operations of the company's West Island Division: the Franklin and Sproat Lake Operations near Port Alberni, and the Clayoquot Operation at Ucluelet.

The Vancouver Island Land Use Plan resulted in the removal from the TFL of 9,000 hectares as protected areas, including areas in the Upper Carmanah and Walbran watersheds. In addition, low intensity areas were established on approximately 41,000 hectares in the TFL, in the Walbran and Nahmint watersheds, in the Strathcona-Taylor area and adjacent to Barkley Sound and the Alberni Inlet.

The 1993 *Clayoquot Sound Land Use Decision* by government established a further 33,000 hectares of protected areas in the TFL. In 1994, the province of BC and the central regional chiefs of the Nuu-chah-nulth Tribal Council signed an interim measures agreement, setting out conditions for resource extraction in Clayoquot Sound prior to completing treaty negotiations. Since 1997, there have been no harvesting activities in the Clayoquot portion of the TFL. Industrial activity in the area is confined to silviculture, road maintenance and deactivation, fire protection and roadside salvage harvesting. In addition, a major road deactivation program, funded by Forest Renewal BC, was commenced in Clayoquot Sound in 1995 and is ongoing.

TFL 44, excluding Clayoquot Sound, has an allowable annual cut of 1,760,000 cubic metres, of which 81,000 cubic metres are allocated to the Small Business Forest Enterprise Program (SBFEP).

2.0 Audit Scope

The audit examined the planning and field activities of MacMillan Bloedel in the areas of operational planning (including forest development plans[i], silviculture prescriptions[ii], and logging plans[iii]); timber harvesting; road construction, maintenance and deactivation; silviculture; and fire protection. These activities were assessed for compliance with the *Forest Practices Code of British Columbia Act* and related regulations (the Code), including the transitional provisions of the Code.

All activities, planning and obligations for the period July 16, 1998 to August 15, 1999 were included in the scope of the audit. In addition, where the audit identified concerns with practices in the period, any related activities and obligations in a subsequent period were also examined.

The activities carried out, and obligations arising, during the audit period, were:

Timber harvesting and road construction, maintenance and deactivation

- harvesting of 141 cutblocks
- construction of 68 road sections totalling 78 kilometres
- maintenance of approximately 5,500 kilometres of road, involving activities such as road surfacing and cleaning culverts and ditches
- construction of 12 bridges and maintenance of 550 bridges
- deactivation of 27 road sections totalling 33 kilometres

Silviculture

- site preparation for tree planting on 101 cutblocks and treeplanting of 273 cutblocks
- brushing on 52 cutblocks
- regeneration obligations on 105 cutblocks
- free growing obligations on 133 cutblocks

Fire protection

- fire protection planning and infrastructure

Operational planning

Activities carried out during the audit period were governed by a total of eight different forest development plans. Forest development planning conducted during the audit period involved some consolidation of plans. The Sproat Lake 1999-2003 Forest Development Plan was approved during the audit visit. In addition, 72 silviculture prescriptions were approved during the audit period, of which 54 had harvesting activity.

Activities and obligations in the Clayoquot portion of the TFL, included in the above, comprised:

- construction of 1 road of 0.7 kilometres to access a road to be deactivated
- road and bridge maintenance activities
- site preparation for tree planting on 22 cutblocks and treeplanting on 36 cutblocks
- brushing on 44 cutblocks
- regeneration obligations on 43 cutblocks
- free growing obligations on 6 cutblocks

Deactivation of roads not used since the Code, conducted with Forest Renewal BC funding, and SBFEP activities in the TFL were not included in the audit.

Section 3 describes the audit of these activities, and the results. The Board's audit reference manual, *Reference Manual - Compliance Audits, Version 4.0, May 1999*, sets out the standards and procedures that were used for this audit.

3.0 Audit Findings

Planning and practices examined

The selection of sample roads and cutblocks involved a risk assessment process. Activities and areas assessed as high risk were subjected to more testing than lower-risk activities. The audit work on selected roads and cutblocks included ground-based procedures and assessments from the air using helicopters. The audit examined:

Timber harvesting and road construction, maintenance and deactivation

- harvesting through an initial sample of 33 cutblocks using ground inspection, and a further sample of 17 blocks by helicopter
- construction of 21 road sections totalling 28 kilometres
- maintenance of approximately 650 kilometres of road, including all of the approximate 100 kilometres of Clayoquot roads with industrial use since the Code
- deactivation of 10 road sections totalling 18 kilometres
- construction of 7 bridges and maintenance of 54 bridges
- the stability of deactivation of areas used since the Code

Silviculture

- site preparation for tree planting on 14 cutblocks and tree planting on 22 cutblocks
- brushing on 8 cutblocks
- regeneration obligations on 9 cutblocks
- free growing obligations on 27 cutblocks

Fire protection

- fire protection plans and infrastructure

Operational planning

Because of the large number of forest development plans and associated amendments, the audit adopted a focused sampling approach that involved performing a complete assessment of two of the plans approved in 1997 and a limited review of the other plans. This included ensuring that sufficient information was provided to interested publics and major amendments were appropriately approved. In addition, because plans approved in 1997 may not have been

representative of current planning activities, the audit included a complete examination of the Sproat Lake 1999-2003 Forest Development Plan approved during the audit visit.

The audit also examined 20 of the 72 silviculture prescriptions approved during the period.

Findings

In those parts of the TFL with active operations, the audit identified significant non-compliance in windthrow management, road construction and bridge maintenance. The audit found that MacMillan Bloedel was in compliance, in all significant respects, with the Code's planning and practices requirements for silviculture, fire protection, and road deactivation, and with the Code's forest development planning requirements. In Clayoquot Sound, practices were found to be in compliance with the Code.

3.1 Harvesting – Windthrow

Windthrow, the loss of standing trees resulting from wind, is a risk both to forest health and to other forest resources, such as streams. Much of TFL 44 is exposed to high winds from the Pacific Ocean. The wind speeds and directions are difficult to predict, and managing for windthrow remains an inexact science.

Pruning was the most common prescription dealing with windthrow in TFL 44 during the audit period. Prescriptions generally required boundaries along topographic breaks to be moved back and edges to be pruned heavily. Also, if harvesting was to be completed during the April to September period, then pruning was to be completed by October 31. If harvesting was completed at any other time, then pruning was to be done within four weeks of completion of harvesting.

Of the initial harvesting sample of 33 cutblocks, 20 had prescriptions addressing windthrow. Of these, 13 silviculture prescriptions prescribed pruning areas of standing trees, while others contained prescriptions for feathering (leaving an irregular edge) and block layout to accommodate wind patterns.

The initial audit work identified a high incidence of windthrow, including blocks with windthrow prescriptions where pruning had been prescribed, but had either not yet been completed, because the pruning deadline had not passed, or was completed but windthrow occurred despite the pruning. During follow-up examination, it was determined that, of the 13 prescriptions requiring pruning by October 31, none were completed by the established deadline, and only one had been completed by April 30, 2000.

This non-compliance, which is significant, relates to failure to comply with a plan, as required by section 67(1) of the *Forest Practices Code of British Columbia Act*.

The audit also identified the need for improvement in MacMillan Bloedel's windthrow strategies, including the need for interim protection for cutblocks started in one year, which are left open for a winter without windthrow protection, before completion and carrying out the windthrow prescription in the next year.

3.2 Road Construction

Culvert Construction

At 13 locations on 6 roads constructed in one part of the TFL, the audit identified poorly constructed culverts. The observed deficiencies included logs not lashed together, fabric not covering the whole deck, or no guardlogs to prevent sediment from entering the stream. In some of these cases, spoil material was left in the riparian area or there were insufficient erosion control measures at culvert inlets.

The risk to forest resources from the improper construction in each of these instances was not high. However, the nature and frequency of the practices were considered significant because of the potential for greater environmental impact should the practices continue.

The main section of the Code that the non-compliance relates to is section 13 of the *Forest Road Regulation*.

Compliance with Prescriptions - Unstable Fill

At seven locations on five road construction sections examined, the audit identified concerns with practices in steep terrain. In six of these locations, MacMillan Bloedel did not fully comply with geotechnical prescriptions or construction plans. The prescriptions and/or plans required a combination of full-bench construction, end haul (material to be hauled away), and avoidance of sidecast material or unstable fill. The audit identified unstable fill in six of these situations and one instance of spoil material being placed on the outer edge of a road in an end-haul area.

In each of these instances, the risk to forest resources from the inadequate construction was not high. However, the nature and frequency of the practices were considered significant because of the potential for greater environmental impact should the practices continue.

The main sections of the Code that the non-compliance relates to are section 62(1) of the Act and sections 11(8) and 12(1) of the *Forest Road Regulation*.

3.3 Bridge Maintenance

The Code requires inspection of the structural integrity of bridges every three years, and every two years if there are wooden components. Structural integrity provides for safe use and minimization of sediment entering streams.

Macmillan Bloedel inspects bridges annually, except in Clayoquot Sound, where inspections are conducted every two years, most recently in 1998.

The audit identified a number of deficiencies in the bridge inspection and maintenance program in the active part of the TFL. At six bridges, the audit identified specific deficiencies and a seriousness of condition that had not been reported in the recent inspection. A number of deficiencies reported in the previous year's inspections had also not been addressed, including repairs to guard rails.

MacMillan Bloedel had recognized deficiencies in the inspection report and, concurrent with the audit, re-inspected a large number of bridges. MacMillan Bloedel also responded promptly to the audit concerns, replacing one bridge and placing restricted load signs on three other bridges. The inspection program has now been revised.

As its inspection program was unable to provide MacMillan Bloedel the required information and assurance as to the adequate condition of the bridges during the audit period, the audit concluded that its bridge maintenance was not in compliance with Code requirements.

The main sections of the Code that the non-compliance relates to are section 16(3), 17(1) and 18(1)(a) and (e) of the *Forest Road Regulation*.

4.0 Other Comments

4.1 Forest Resource Planning

The TFL 44 forest development plans were required to specify measures that would be carried out to protect forest resources. To meet this requirement, the plans had to meet specific requirements of the *Operational Planning Regulation* and the objectives of any landscape level plans which had been designated by government as higher level plans.

Under the Forest Practices Code, landscape level planning is expected to provide direction to forest development planning through the setting of landscape level objectives, which typically include objectives for the maintenance of successional stages of the forest, biodiversity and the management of habitat of specific species. However, as the Vancouver Island Land Use Plan had not been formally approved as a higher level plan at the time of forest development plan approval, landscape level issues dealt with in this plan were not required to be addressed.

In the absence of higher level plans, the *Operational Planning Regulation* still requires forest development plans to address actions to achieve known landscape level objectives, including any biological diversity objectives and objectives for the management of identified wildlife.

The information made known by the Ministry of Forests district manager related to scenic areas, ungulate winter range and forest ecosystem networks. In addition, the district manager concluded that the Vancouver Island Land Use Plan and the Low Intensity Area Review Committee (LIARC) report were known information for those parts of the TFL in the Nahmint and Strathcona-Taylor special management zones.

Landscape level objectives were not established for old growth and, except for in the special management zones, for biodiversity values, wildlife habitat other than ungulate winter range, and recreational values.

As landscape level objectives have not been fully established, and as a result it is not clear if all forest resources have been identified, it was not possible to determine whether all forest resources are being adequately addressed at the landscape level. It was, therefore, also not possible to fully assess the level of protection of such resources at the site level.

Because of this limitation in the Code's implementation, the audit assessed MacMillan Bloedel's compliance based on the Code requirements that were in place and the forest resources made known by the district manager.

4.2 Clayoquot Sound

Since 1997, there have been no forest development activities in the Clayoquot portion of the TFL. Industrial activity in the area has been confined to silviculture, road maintenance and deactivation, fire protection and roadside salvage harvesting. In addition, one road was constructed to access a road deactivation project.

The audit found that all activities conducted by the company in the Clayoquot portion of the TFL were in compliance with the Code.

A major road deactivation program, funded by Forest Renewal BC, commenced in Clayoquot Sound in 1995 and is ongoing. During this period, MacMillan Bloedel has also performed, at its own cost, maintenance and deactivation on roads for which it does not have a Code obligation. Subsequent to the audit, portions of the TFL were transferred to Iisaac, a joint venture between Mamook Development Corporation (owned by the five first nations bands in the central region) and Weyerhaeuser. Weyerhaeuser currently retains certain obligations related to silviculture, and road maintenance and deactivation.

5.0 Audit Opinion

In my opinion, except for the significant non-compliance described below, the operational planning; timber harvesting; road construction and deactivation; silviculture and fire protection activities of MacMillan Bloedel Ltd. on TFL 44, from July 16, 1998 to August 15, 1999 were in compliance, in all significant respects, with the requirements of the Code as of September 1999.

Windthrow management

As described in section 3.1, the audit identified a high incidence of windthrow, including blocks with windthrow prescriptions where pruning had been prescribed, but was either not yet complete, because the pruning deadline had not passed, or was completed but windthrow occurred despite the pruning. During follow-up examination, it was determined that, of the 13 prescriptions requiring pruning by October 31, none were completed by the established deadline, and only one had been completed by April 30, 2000.

The failure to comply with the pruning prescriptions—a key aspect of the windthrow management strategy—was considered to be significant non-compliance with the Code.

Road construction

In the area of road construction, the audit identified two findings of significant non-compliance, as described in section 3.2.

- At 13 locations on 6 roads constructed in one part of the TFL, the audit identified poorly constructed culverts. The observed deficiencies included logs not lashed together, fabric

not covering the whole deck, no guardlogs to prevent sediment from entering the stream, or insufficient erosion control measures at culvert inlets.

- At seven locations on five road construction sections examined, the audit identified concerns with practices in steep terrain. In six of these locations, MacMillan Bloedel did not fully comply with geotechnical prescriptions and/or construction plans. The audit identified unstable fill in six of these situations and one instance of spoil material being placed on the outer edge of a road in an end-haul area.

In each of these instances, the risk to forest resources from the improper construction was not high. However, the nature and frequency of the practices were considered significant because of the potential for greater environmental impact should the practices continue.

Road maintenance - bridges

In my opinion, the bridge maintenance carried out by MacMillan Bloedel Ltd. in TFL 44 from July 16, 1998 to August 15, 1999 did not comply with the Code. As described in section 3.3, there were a number of deficiencies in the bridge inspection and maintenance program in the active part of the TFL. At six bridges, the audit identified specific deficiencies and a seriousness of condition that had not been reported in the recent inspection. A number of deficiencies reported in the previous year's inspections had also not been addressed, including repairs to guard rails.

MacMillan Bloedel had recognized deficiencies in the inspection report and, concurrent with the audit, re-inspected a large number of bridges. MacMillan Bloedel also responded promptly to the audit concerns, replacing one bridge and placing restricted load signs on three other bridges. The inspection program has now been revised.

As its inspection program was unable to provide MacMillan Bloedel the required information and assurance as to the adequate condition of the bridges during the audit period, the audit concluded that its bridge maintenance was not in compliance with Code requirements. Other road maintenance activities were found to be in compliance with Code requirements.

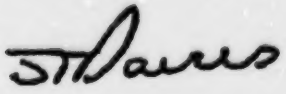
Other

Without further qualifying my opinion, I draw attention to section 4.1, which explains the place of higher level plans in the planning regimes anticipated by the Code, and the effect that their absence has on the identification of measures to protect forest resource values.

As landscape level objectives have not been fully established, and as a result it is not clear if all forest resources have been identified, it was not possible to determine whether all forest resources are being adequately protected. Because of this limitation in the implementation of the Code, the audit assessed MacMillan Bloedel's compliance based on Code requirements that were in place and the forest resources made known by the Ministry of Forests district manager. This situation was not considered to be non-compliance by MacMillan Bloedel.

In reference to compliance, the term "in all significant respects" recognizes that there may be minor instances of non-compliance that either may not be detected by the audit, or that are detected but not considered worthy of inclusion in the audit report.

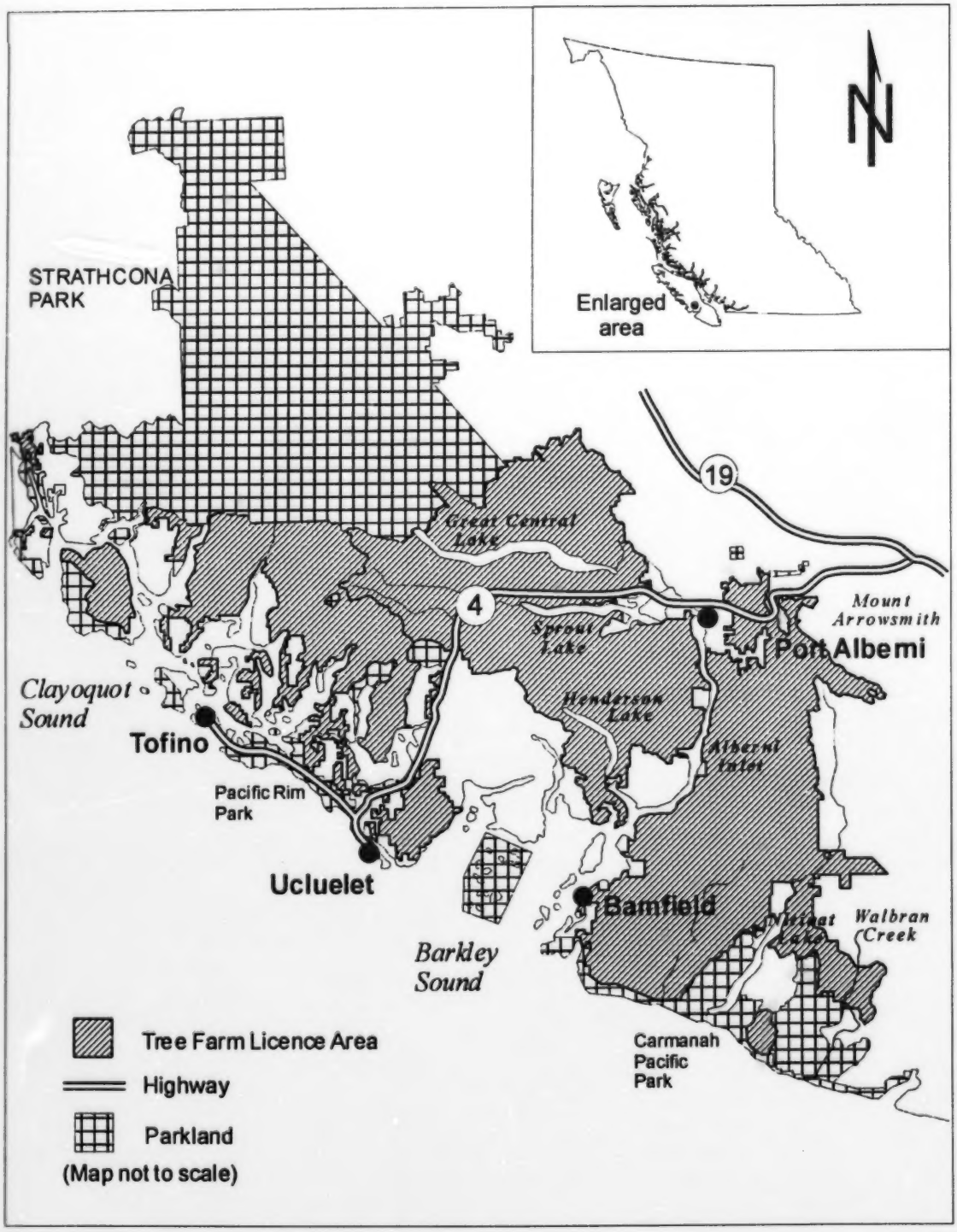
Sections 2 and 3 of this report from the auditor describe the basis of the audit work performed in reaching this opinion. The audit was conducted in accordance with the auditing standards of the Forest Practices Board. Such an audit includes examining sufficient operational planning; timber harvesting; silviculture; road construction, maintenance, and deactivation; and fire protection practices to support an overall evaluation of compliance with the Code.



Jon Davies, CA
Auditor of Record

Victoria, British Columbia
October 27, 2000

Audit of MacMillan Bloedel Limited.
Tree Farm Licence 44



[i] A forest development plan is an operational plan that provides the public and government agencies with information about the location and scheduling of proposed roads and cutblocks for harvesting timber over a period of at least five years. The plan must specify measures that will be carried out to protect forest resources (including water, fisheries, and other forest resources). It must also illustrate and describe how objectives and strategies established in higher level plans, where they have been prepared, will be carried out. Site specific plans are required to be consistent with the forest development plan.

[ii] A silviculture prescription is a site specific operational plan that describes the forest management objectives for an area to be harvested (a cutblock). The silviculture prescriptions examined in the audit are required to describe the management activities proposed to maintain the inherent productivity of the site, accommodate all resource values including biological diversity, and produce a free growing stand capable of meeting stated management objectives. Silviculture prescriptions must be consistent with forest development plans that encompass the area to which the prescription applies.

[iii] A logging plan is an operational plan that details how, when, and where timber harvesting and road construction activities will take place in a cutblock, in accordance with the approved silviculture prescription and forest development plan for the area. Information about other forest resource values, plus all current field information for the area, must be clearly shown in the logging plan. The requirement to prepare logging plans was repealed on June 15, 1998, but may be in effect in limited circumstances. Logging plans approved before June 15, 1998 continue to be in effect until timber harvesting is completed.